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Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

04-OES-0078

JUN 3 2004

Mr. Michael A. Wilson, Program Manager
Nuclear Waste Program
State of Washington
Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99352

Dear Mr. Wilson:

CERTIFICATION OF CLOSURE FOR AREAS TWO, FOUR AND FIVE OF THE 105-DR REACTOR'S LARGE SODIUM FIRE FACILITY (LSFF)

Reference: (1) Ecology ltr. to J. E. Rasmussen, U.S. Department of Energy, Office of River Protection, and E. F. Loika, Westinghouse Hanford Company, Inc., from M. A. Wilson, no subject, dtd. July 16, 1996.

Closure activities for areas two, four and five of the 105-DR Reactor's LSFF were completed on April 1, 2004. The Owner/Operator Closure Certification (Attachment 1), the independent registered Professional Engineer's (PE) Certification of Closure Statement (Attachment 2) and the independent registered PE's Closure Certification Report (Attachment 3) are provided in accordance with Washington Administrative Code (WAC) 173-303-610(6). The closure certifications were prepared in accordance with WAC 173-303-610, the 105-DR LSFF Closure Plan (DOR/RL-90-25), and the Action Memorandum for 105-F and 105-DR Reactor Buildings and Ancillary Facilities dated July 14, 1998.

A partial closure of the unit was achieved in 1996 [Reference (1)]. The 105-DR Closure Plan (DOE/RL-90-25) called for the remaining portions of the Treatment, Storage and Disposal (TSD) to be deferred to the 105-DR decontamination and decommissioning (D&D) activity. The remaining portions of the 105-DR LSFF are comprised of:

- Area 2: the underground exhaust tunnel between the 105-DR Building, the 117-DR Building and the 116-DR Exhaust Stack;
- Area 4: 117-DR Exhaust Filter Building including the downstream (post-filter) tunnel between the filter building; and
- Area 5: the 116-DR Exhaust Stack of the 105-DR Reactor, completed in 2004.

D&D activities completely removed the 117-DR Building and the upper portions of the exhaust tunnels and the 116-DR Exhaust Stack. The lower portions of the exhaust tunnels and the 116-DR Exhaust Stack remain, but verification sample results confirm the applicable cleanup levels were achieved for these sites to obtain a clean closure determination for the remaining three portions of the TSD. The independent PE certification and report state that all closure activities were performed in accordance with the approved plan.

Should you have any questions, please contact me, or your staff may contact Joel Hebdon, Director, Office of Environmental Services, on (509) 376-6657.

Sincerely,

for Keith A. Klein
Manager

OES:ACM

Attachments:
1. Owner/ Operator Closure Certification
2. Professional Engineer's Certification of Closure Statement
3. Independent Registered PE Closure Certification Report

cc w/ attachs:
R. W. Bond, Ecology
N. Ceto, EPA
D. A. Faulk, EPA
J. W. Golden, BHI
Administrative Record
Environmental Portal

cc w/o attachs:
J. A. Hedges, Ecology
J. J. McGuire, BHI
D. C. Smith, RL

Attachment 1

OWNER/OPERATOR
CLOSURE CERTIFICATION
FOR
105-DR LARGE SODIUM FIRE FACILITY

We, the undersigned, hereby certify that Areas 2, 4, and 5 of the 105-DR Large Sodium Fire Facility closure activities were performed in accordance with the specifications in the Washington Administrative Code 173-303-610.

[signature] 6/2/04

Owner/Operator — Date

For Keith A. Klein, Manager
U.S. Department of Energy
Richland Operations Office

[signature] 5/6/04

Co-Operator — Date

Thomas E. Logan, President
Bechtel Hanford, Inc.

Attachment 2

Professional Engineer's Certification of Closure for the 105-DR Large Sodium Fire Facility (LSFF) (T-1-1), Subunits 122-DR-1:2, 122-DR-1:4, and 122-DR-1:5.

PREPARED FOR: James W. Golden/Bechtel Hanford, Inc.

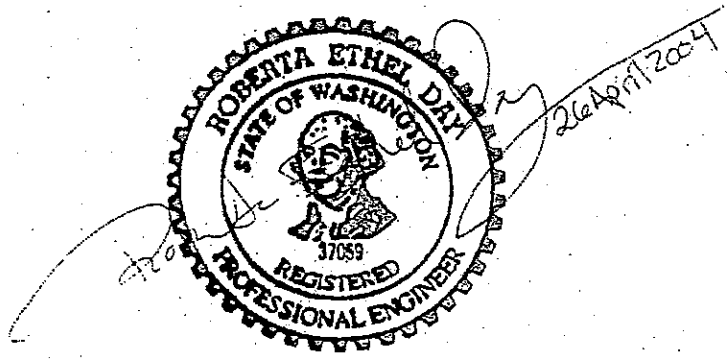
PREPARED BY: Roberta E. Day/CH2M HILL

DATE: April 26 2004

I, the undersigned, an independent registered Professional Engineer, hereby certify that, to the best of my knowledge and belief, all closure activities for the Large Sodium Fire Facility (LSFF) (T-1-1), Subunits 122-DR-1:2, 122-DR-1:4, and 122-DR-1:5, were performed in accordance with the approved closure plan and other relevant documents. This certification is based solely on a review of pertinent documents, interviews of cognizant project personnel, and my personal observations of field activities, which are described in the enclosed Attachment 2.

The above statements are true and complete to the best of my knowledge and within the limits of professional judgement under the prevailing standards of practice on this 26th day of April, 2004.

Roberta E. Day
Washington P.E. # 37059
CH2M HILL



EXPIRES: January 07, 2005

Attachment 3

Specifications and Limitations of Professional Engineer's Certification for the 105-DR Large Sodium Fire Facility (LSFF) (T-1-1), Subunits 122-DR-1:2, 122-DR-1:4, and 122-DR-1:5.

PREPARED FOR: James W. Golden/Bechtel Hanford, Inc.

PREPARED BY: Roberta E. Day/CH2M HILL

DATE: April 26, 2004

Scope of Closure

The Large Sodium Fire Facility (LSFF) is a Resource Conservation and Recovery Act of 1976 (RCRA)-permitted waste treatment, storage, and disposal (TSD) unit, which operated from 1972 to 1986 under RCRA TSD Permit T-1-1. This facility is located at the North end of the Hanford Site, in close proximity to the 105-DR Reactor building. Beginning operations after the 105-DR Reactor was shut down and no longer operational, the LSFF was used to study the fire and safety aspects associated with alkali metal (primarily sodium and lithium) fires for application to liquid metal reactors.

To ease management of the closure activities, the LSFF TSD was divided into seven "subunits." Four of the seven subunits have already been closed.[1] The LSFF Closure Plan[2] deferred the remaining three subunits (122-DR-1:2, 122-DR-1:4, and 122-DR-1:5) to the CERCLA Interim Safe Storage process. Exhibit 1 provides a summary of the subunit areas and status.

EXHIBIT 1
Subunit Summary and Status

Subunit	Description	Status
122-DR-1:1	Exhaust fan room, small fire room, large fire room, sodium handling room, and an office area	Previously closed
122-DR-1:2	Underground exhaust duct	Addressed herein
122-DR-1:3	Gravel scrubber and ducts	Previously closed
122-DR-1:4	117-DR filter building and the downstream tunnel to the reactor stack	Addressed herein
122-DR-1:5	110-DR Reactor exhaust stack	Addressed herein
122-DR-1:6	116-DR-8 Crib and associated piping	Previously closed
122-DR-1:7	Outdoor storage area	Previously closed

The purpose of this project is to conduct the certification of closure as required by WAC 173-303-610(6)[3] for the closure of the remaining subunits of the LSFF, as shown in Figure 1. The certification is based on CH2M HILL's review of the commitments made in the Closure Plan[2] and the Action Memoradum.[4]

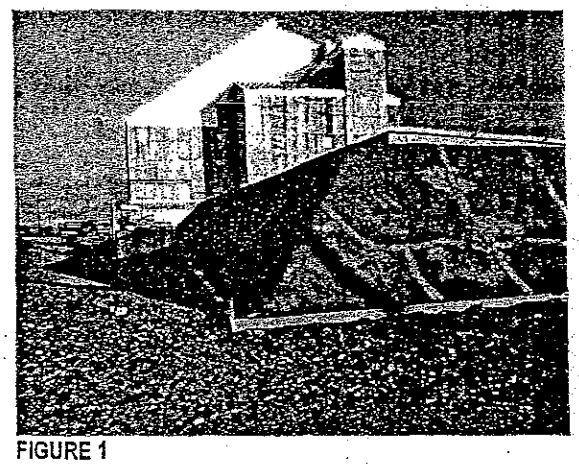


FIGURE 1
LSFF with the 105-DR Reactor in Background
13 Dec 02

Closure Strategy

The strategy for closure of the LSFF is clean closure. This closure strategy is coordinated with the Interim Safe Storage, Decontamination, and Demolition.

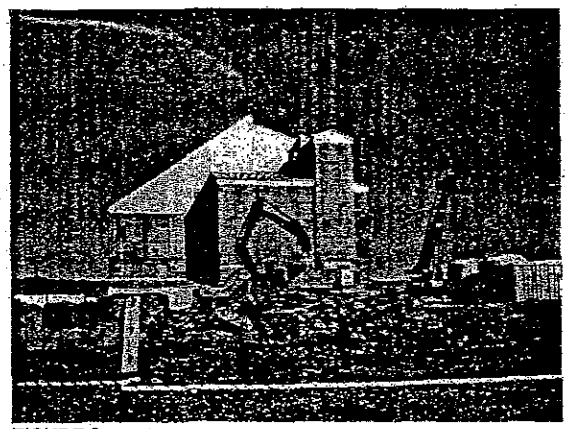


FIGURE 2
LSFF, mid Closure Activities
03 February 03

Closure Requirements and Summary of Closure Activities

The closure performance standards, as defined in the Closure Plan[2], are identified in Exhibit 2, which also provides a summary discussion of the closure activities pertinent to these standards. Figures 2 and 3 show the field activities. Figure 4 was taken shortly after backfill activities were completed.

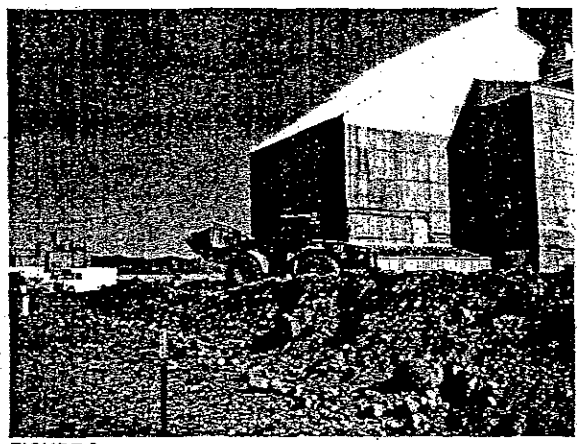


FIGURE 3
LSFF, Managing Backfill
03 February 03

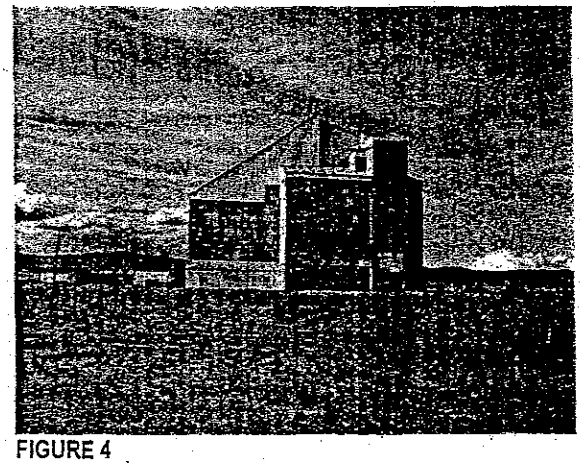


FIGURE 4
LSFF, Following Completion of Closure Activities
16 April 04

EXHIBIT 2
Summary of Closure Performance Standards and Applications

Performance Standard	Discussion
Minimizing the Need for Future Maintenance	The LSFF subunits were clean closed and, as such, do not require future maintenance. Specifically, - 122-DR-1:2, the underground exhaust duct between the 105-DR Building and the 117-DR Exhaust Filter Building, was removed in its entirety. The upper exhaust tunnel and approximately the top 0.9 m (3 ft) of the lower exhaust tunnel were removed. - 122-DR-1:4 (117-DR filter building and the downstream tunnel) and the upper 0.9 m (3 ft) of the 116-DR Reactor Exhaust Stack (122-DR-1:5) were removed. Institutional controls against uncontrolled drilling or digging are required.[5]
Protection of Human Health and the Environment	Soils and debris associated with these LSFF subunits were removed to meet protection of human health and the environment.[5] Shallow zone (i.e., ground surface to 4.6 m [15 ft]) soil and remaining concrete concentrations meet the standards action goals for direct exposure. Residual concentrations throughout the site are protective of groundwater and the Columbia River. However, as indicated in the cleanup verification package[5], institutional controls against uncontrolled drilling or digging are required.
Return of the Land to the Appearance and Use of Surrounding Land	The area around the LSFF subunits has been graded to conform with the surrounding areas (as shown in Figure 4).
Waste Alkali Metals, Remaining Sodium, and Other Materials	These materials were removed and disposed based on visual inspections, discussions with field personnel, and closure documentation.[5]

Review of Physical and Chemical Data

The cleanup verification package[5] evaluates the sampling data to document completion of the defined actions. Based on a review of this package, it was determined that the closure performance standards for the LSFF subunits were met. These standards are based on a rural residential exposure scenario.[6] Shallow zone (i.e., ground surface to 4.6 m [15 ft]) soil and remaining concrete concentrations meet the standards for direct exposure. Residual concentrations throughout the site are protective of groundwater and the Columbia River. However, as indicated in the cleanup verification package[5], institutional controls against uncontrolled drilling or digging are required.

Analysis of Variances from Closure Plan Requirements

None observed.

Noted Exceptions

There are no noted exceptions.

References

1. *Closure Certification for the 105-DR Large Sodium Fire Facility Closure (T-1-1),* Letter dated May 23, 1996, from E. F. Loika, Westinghouse Hanford Company Director Transition Projects to J. E. Mecca, U. S. Department of Energy Director Transition Program Division, 9652161D.

2. *105-DR Large Sodium Fire Facility Closure Plan,* DOE/RL-90-25, Revision 1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

3. WAC-173-303, "Dangerous waste regulations," Washington Administrative Code, as amended.

4. *Action Memorandum for the 105-F and 105-DR Reactor Buildings and Ancillary Facilities, Hanford Site, Benton County, Washington,* U.S. Environmental Protection agency Region 10, Washington State Department of Ecology, and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

5. *Cleanup Verification Package for the 105-DR Large Sodium Fire Facility (122-DR-1:2, 100-D-53/122-DR-1:4, 132-DR-2/122-DR-1:5), the 119-DR Exhaust Stack Sampling Building (100-D-64), and the 100-D-23 and 100-D-54 Dry Wells,* CVP-2003-00018, Rev. 0.

6. *Remedial Design Report / Remedial Action Work Plan for the 100 Area,* DOE/RL-96-17, Rev 4, U.S. Department of Energy, Richland Operations Office, Richland, Washington.